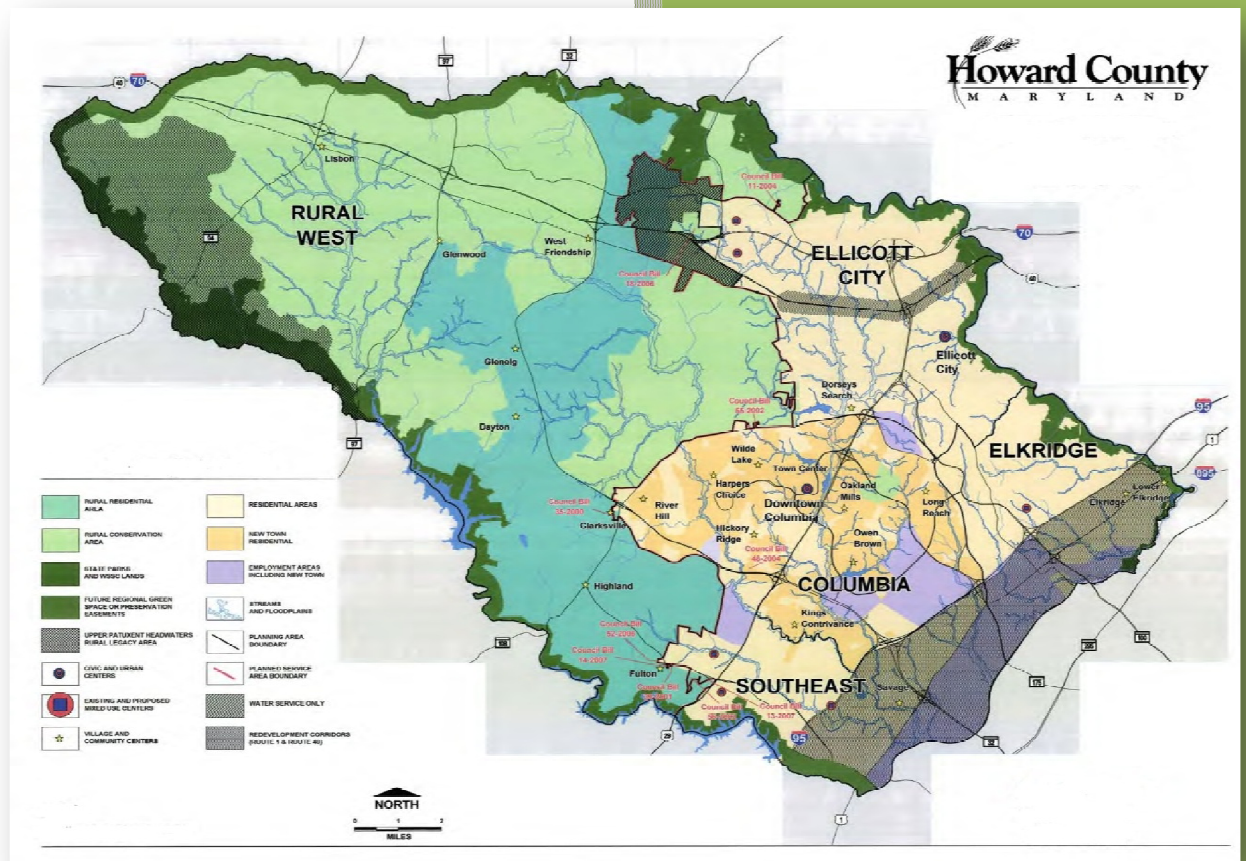




January - December 2012

CMOM Audit Report No. 2



Complaint and Settlement
Agreement between Howard
County, Maryland and the
Maryland Department of the
Environment CO-10-1116

June, 2013



CMOM Audit Report No. 2

January, 2012

Through

December, 2012

**Complaint and Settlement Agreement between Howard County,
Maryland and the Maryland Department of the Environment
CO-10-1116**

This Self-Audit Report is a requirement of “Paragraph C, CMOM Audit” of the Complaint and Settlement Agreement. One year after the commencement of implementation of the approved CMOM Program, and annually thereafter until termination of this Agreement, the County shall conduct a performance assessment audit to evaluate the CMOM Program and submit a report to MDE certifying and describing:

- A. All CMOM tasks completed within approved schedules/milestones and providing an explanation for CMOM work not performed as required;
- B. The effectiveness of the CMOM Program in preventing and minimizing the adverse impacts of Overflows and Building Backups; and
- C. The number and causes of Overflows and known Building Backups that have occurred in each sewer shed for the previous year; and
- D. Actions planned and/or implemented to respond to any failures to perform scheduled CMOM tasks;
- E. Any Collection System deficiencies identified during inspections performed pursuant to the CMOM and actions planned or implemented to address them;
- F. Whether the County has adequately prioritized rehabilitation work to maximize the reduction of Overflows.

This report is to address the second annual CMOM program Self-Audit. Howard County (County)’s CMOM manual was approved by MDE on June 30th, 2011, and was posted on the County’s website with the approval letter from MDE received on July 1st, 2011. The first CMOM Self-Audit report was submitted to MDE on June 22nd, 2012. The County received the approval letter on December 27th, 2012.

A. All CMOM Tasks Summary in 2012

In order to guide the overall tracking and management of an effective and efficient CMOM program, the County intends to meet the following “General Standards” consistent with the EPA’s CMOM requirements:

- Take all feasible and cost-effective steps, as appropriate, to prevent sanitary sewer overflows and to minimize the impact of sanitary sewer overflows when they do occur.
- Properly manage, operate, and maintain all parts of the sewage collection system operated by or under the control of Howard County.
- Identify sewer system capacity needs and deficiencies to provide adequate collection system capacity to convey base and peak flows.
- Establish a chain for communication for sharing information within County departments, State authorities, and community stakeholders.

As is described in the CMOM manual, the County’s quantitative short-term and intermediate-term and long-term goals are summarized as below:

- Inspect manholes once every five years.
- Clean sewer mains which do not have self-cleaning flow characteristics once every 5 years.
- Perform routine CCTV inspection on approximately 5% of the sewer collector mains each year.
- Enhance the efficiency of maintenance crews to achieve an average response time to routine sewer problems of 1 hour or less.

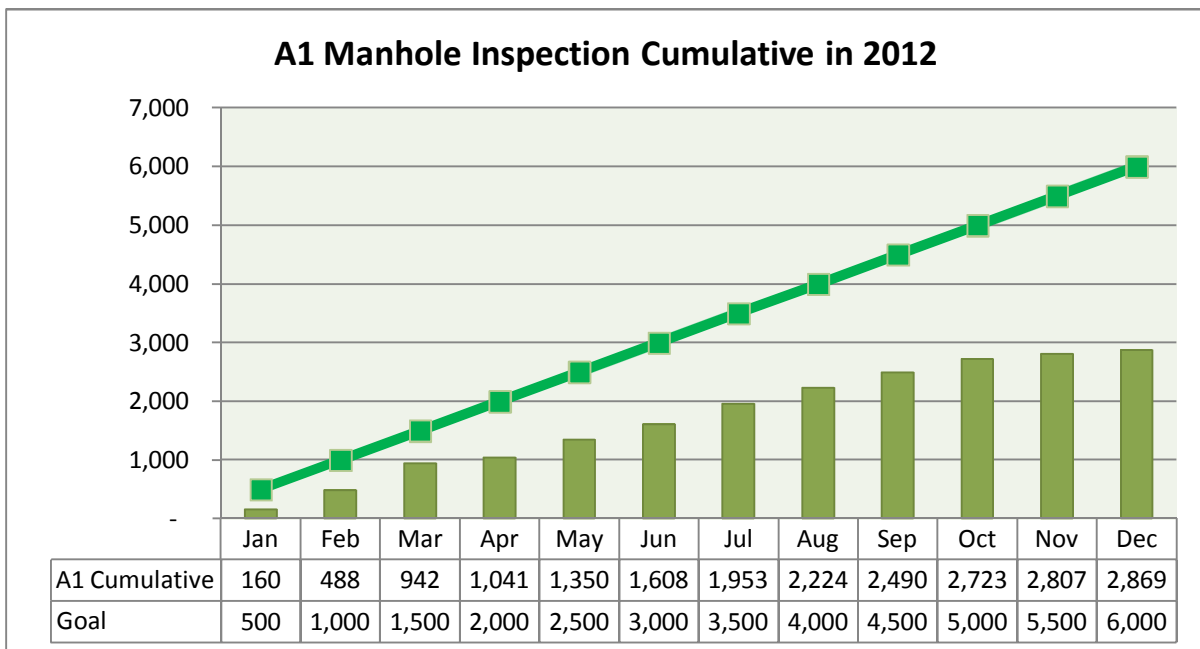
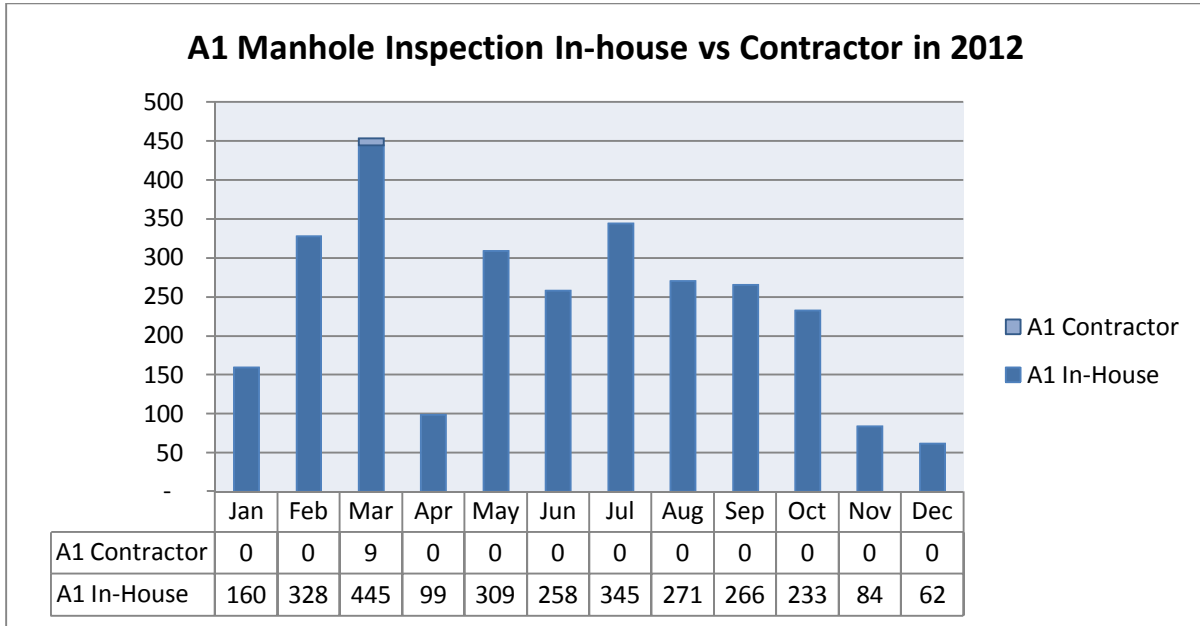
The County’s collection system is served by 30 pumping stations, approximately 975 miles of sewer ranging in size from 4 to 48 inches, and roughly 30,000 manholes. The average annual flow to the Little Patuxent Wastewater Reclamation Plant (LPWRP) for 2012 was 19.3 MGD. According to the given assumption, the County’s quantitative goals in 2012 are interpreted as:

- Inspect 6,000 manholes.
- Clean 195 miles of sewer mains.
- Perform routine CCTV inspection on approximately 48.75 miles (257,400 ft) of sewer collector mains.
- Enhance the efficiency of maintenance crews to achieve an average response time to routine sewer problems of one (1) hour or less.

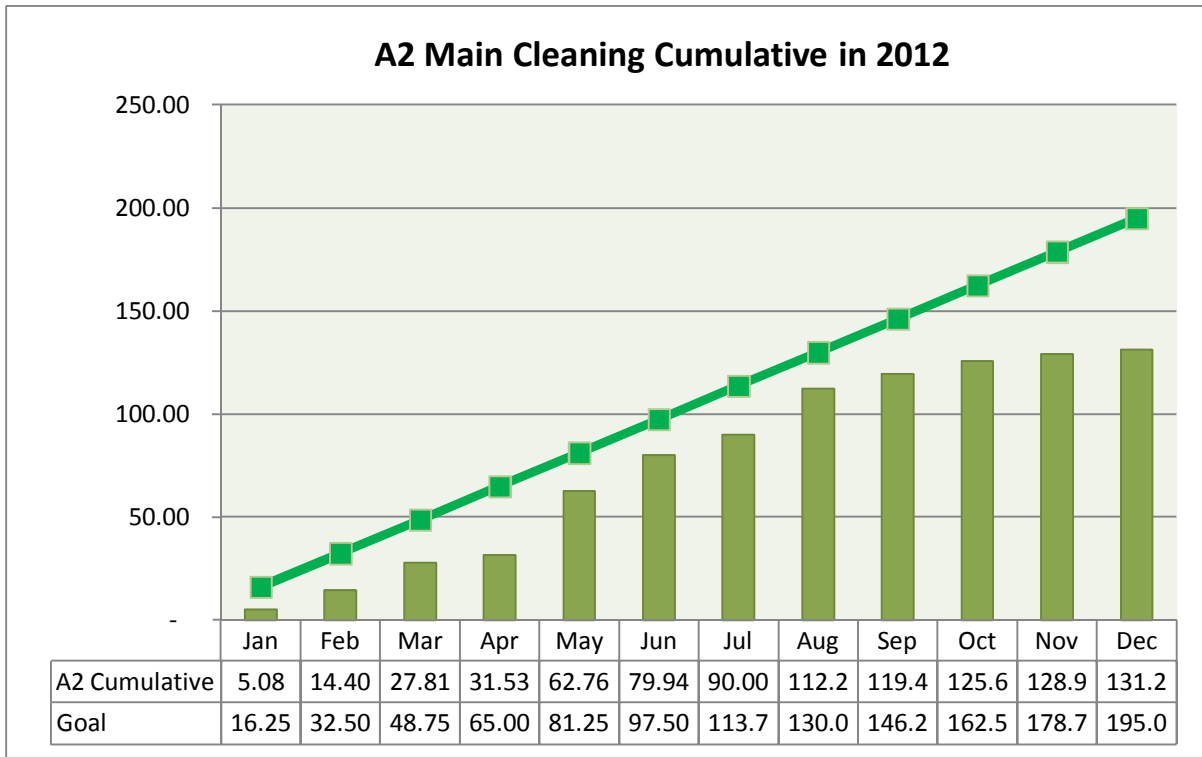
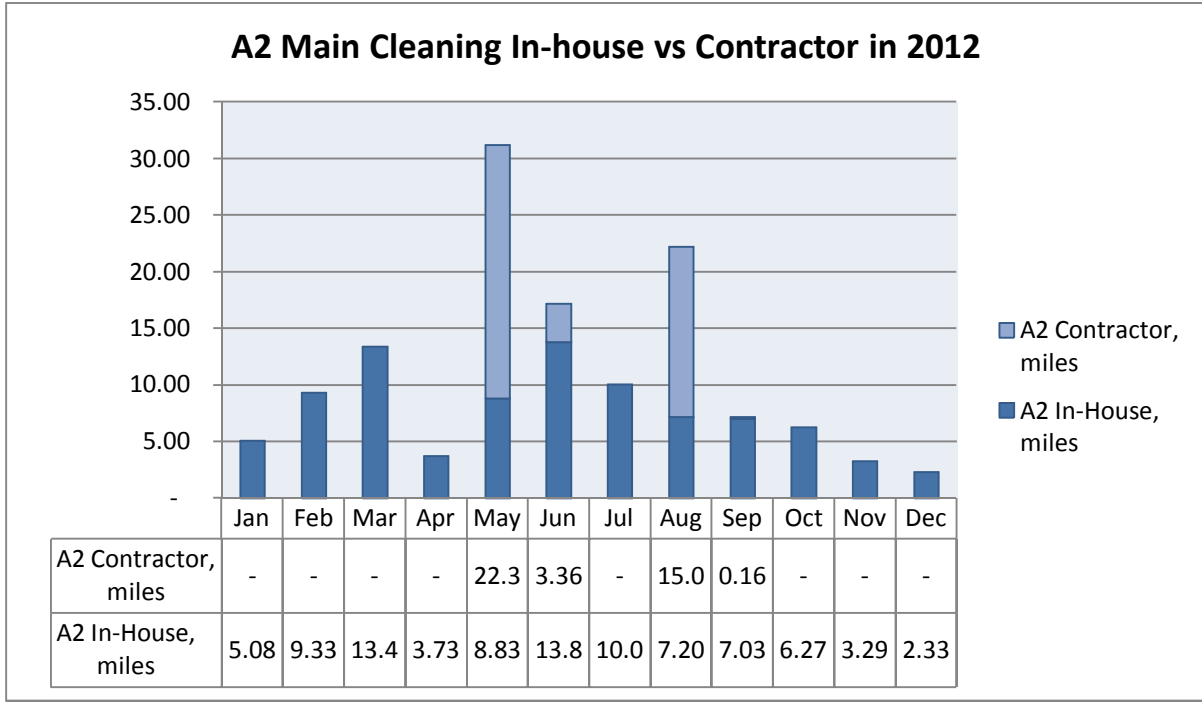
To achieve the CMOM goals, the County has implemented an enhanced collection system maintenance program, with different CMOM components listed in the below charts by

month from January through December 2012. Assuming the sewer collection system has a life span of 100 years, the County will repair/replace 1% of the sewer collection system on average each year; that is, to repair/replace 9.75 miles (51,480 ft) of the sewer mains and 300 manholes. However, as the repair work is identified from the assessment projects, the schedule of repair will be developed accordingly, and will very likely vary from year to year.

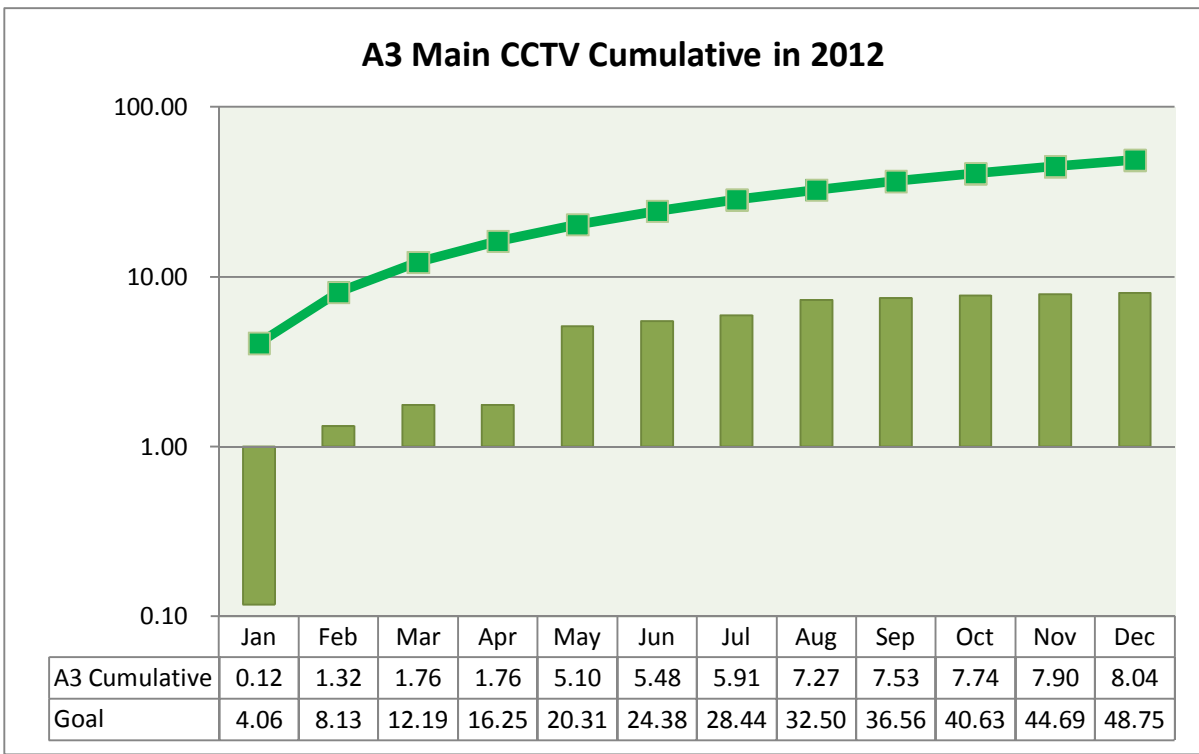
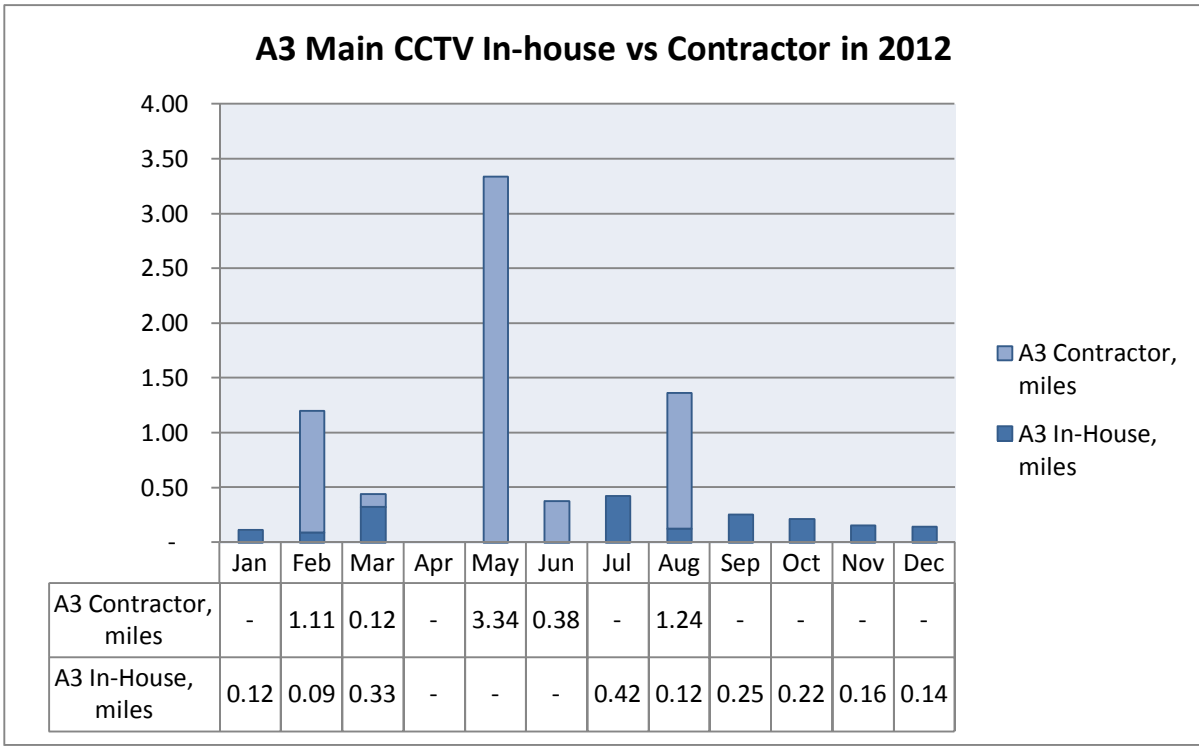
A1. Manhole Inspections:



A2. Sewer Cleaning:

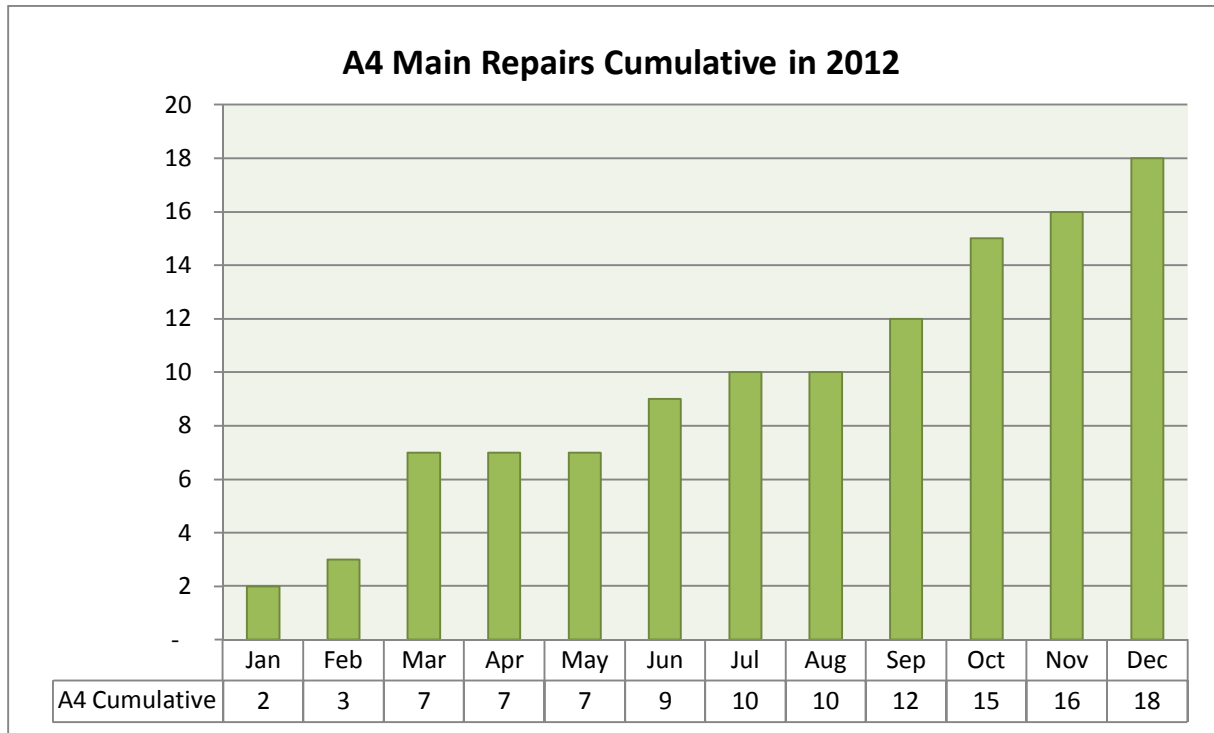
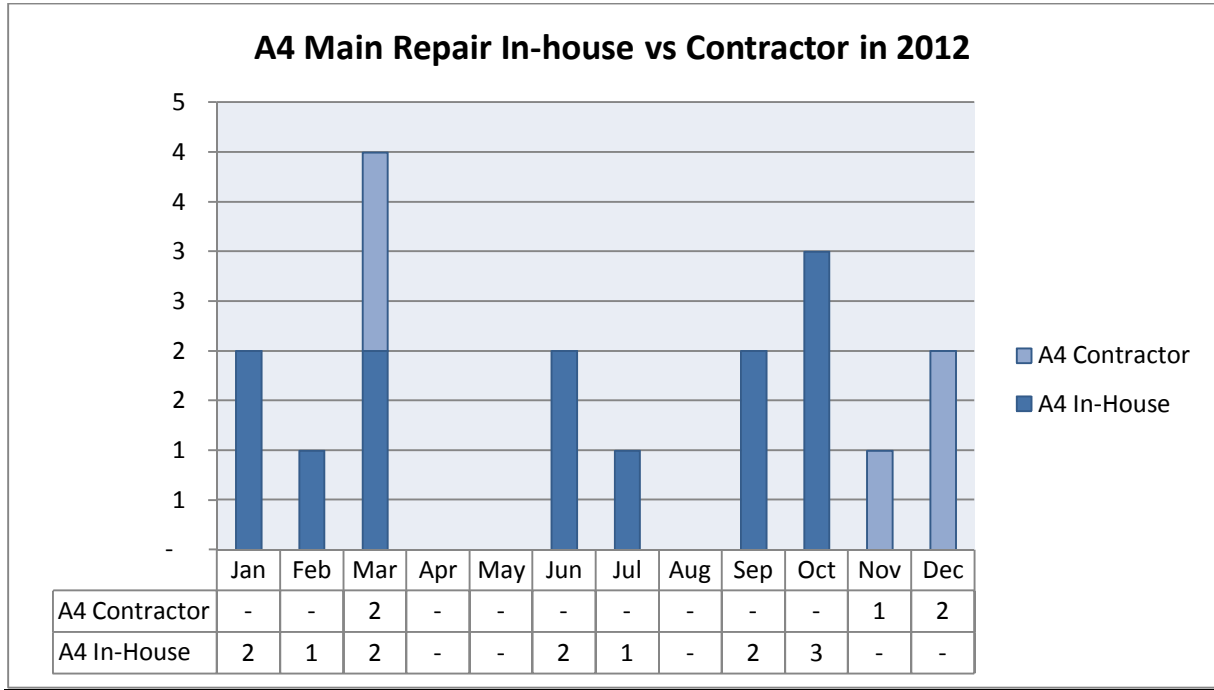


A3. Sewer CCTV Inspection

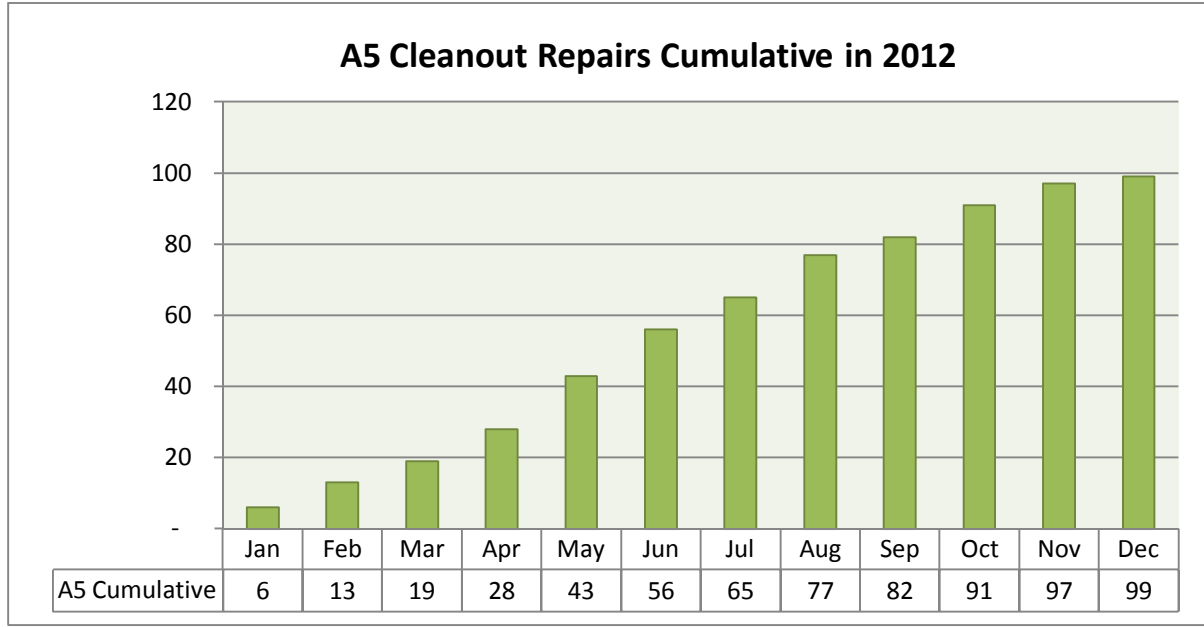


A4. Sewer Main Repairs

The County performed the sewer main repair/replacement on an As-Needed basis. 18 sewer mains were repaired by County's in-house staff in 2012, totaled 4,888 ft.

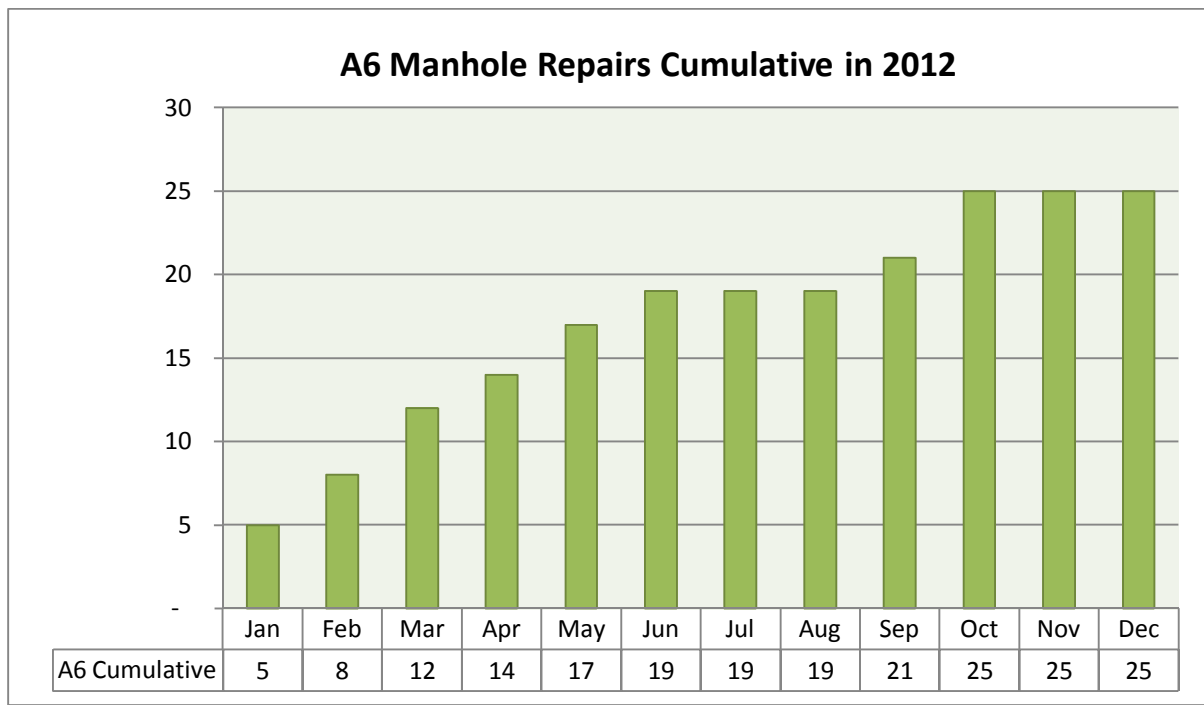


A5. Sewer Cleanout Repairs

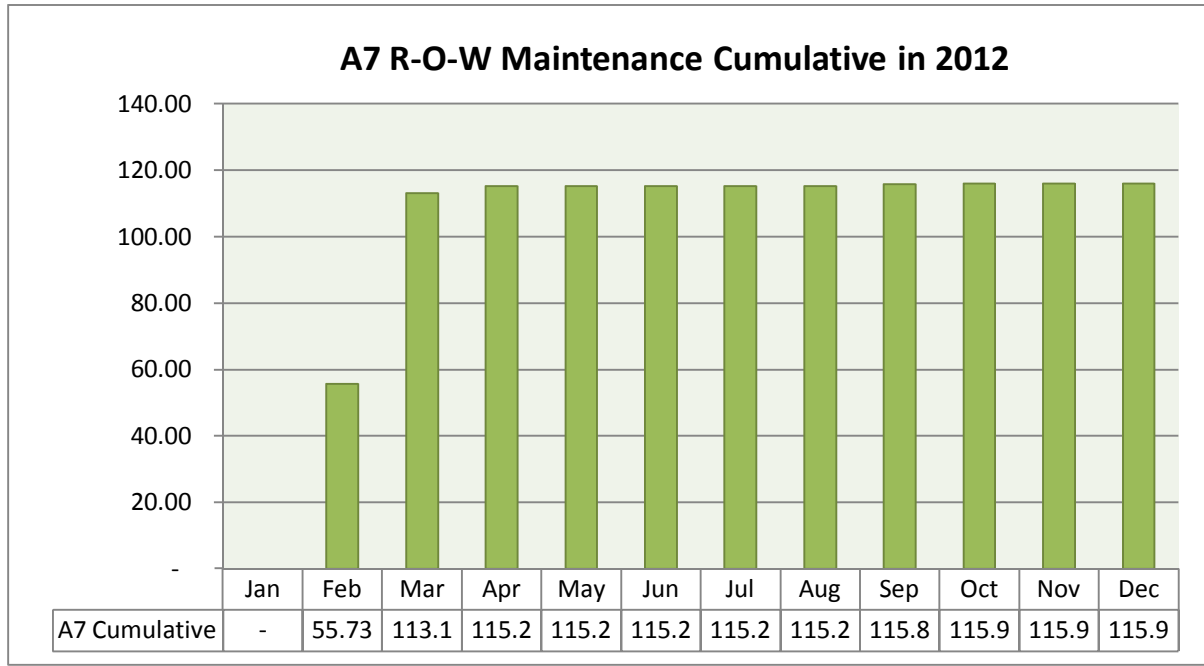


A6. Manhole Repairs

The County performed the manhole repair/replacement on an As-Needed basis. Sanitary sewer manholes are repaired by County’s in-house staff and contractors. There were 25 manholes repaired in 2012.

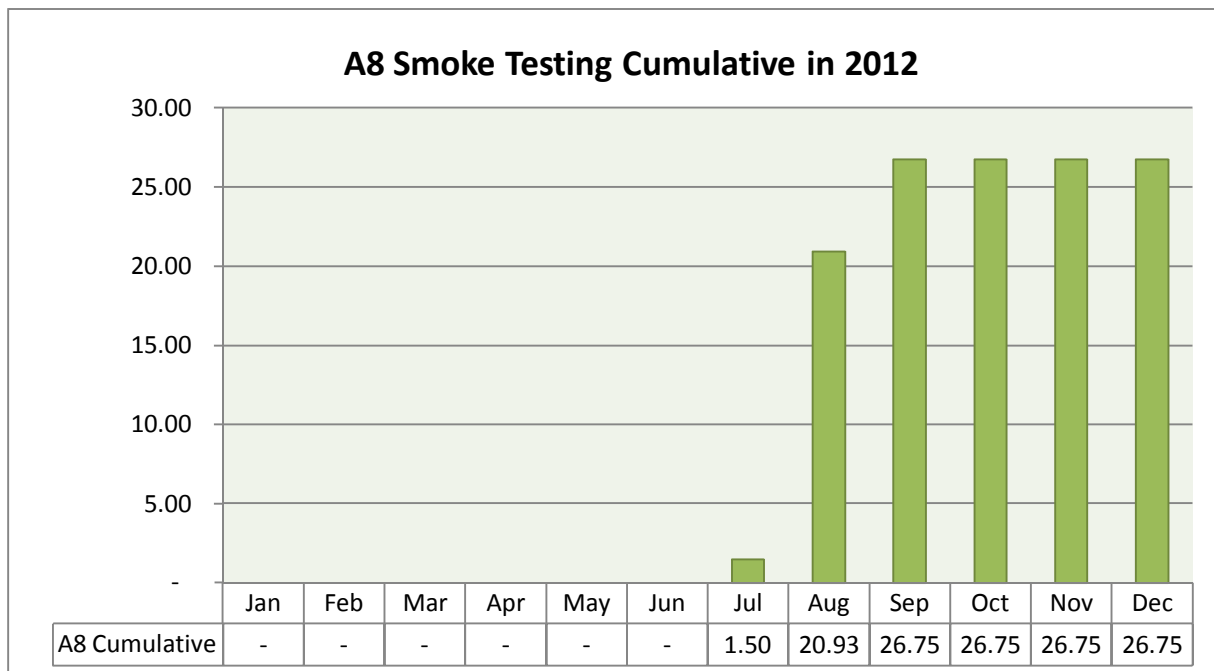


A7. Sewer Right of Way Maintenance



A8. Smoke Testing

In 2012, there was no smoke testing performed by in-house staff. The County has contracted George, Miles & Buhr (GMB) to provide engineering services with smoke testing the North Laurel Area. The intent of this project is to identify the specific locations where the system defects exist to reduce the quantity of extraneous inflow from entering the North Laurel Pump Station.



A9. Sewer Pumping Station Inspections

The Howard County sewer pumping station program, as outlined in the CMOM, provides for station checks of each sewer pumping station twice per week.

A10. Root Treatment

In 2012, the County has scheduled root treatment in 44 sewer mains (11,837 ft), 23 Sewer House Connections, and three (3) manholes.

A11. FOG Program

The County's FOG program inspections consist of:

- Pretreatment staff inspections on Best Management Practices (BMPs), grease interceptors, used cooking oil handling and collection, solid waste handling and disposal; and other activities
- Inspections conducted by the FSEs through their self-monitoring reports
- Inspections conducted by the waste haulers when they pump the interceptors

In 2012, the County has 681 permitted Food Service Establishments (FSEs). Among them 498 have outside interceptors, 135 have inside interceptors, and the rest have neither. The inside interceptors are supposed to be inspected twice every year and the outside interceptors are inspected once every year. Those who don't have grease interceptors are also inspected and are required to implement BMPs in handling food wastes. A sample FSE inspection checklist is attached in Appendix A-1. The County performed 559 inspections in total in 2012.

On a semi-annual basis, FSEs with inside interceptors are required to submit their self-monitoring reports. See sample semi-annual operation and maintenance report in Appendix A-2. This report shows the dates when the pump outs occurred and when the grease barrels were collected. 270 reports have been received from FSEs in 2012, 148 submitted from the first half year and 122 from the rest.

The County has 244 vehicle service facilities. Among them, 91 have oil/water separators, which are supposed to be inspected once every year. There were 116 inspections performed throughout the year.

Also attached in Appendix A-3 is a sample Waste Hauler report. This report contains the condition assessment of the interceptors when they were pumped. The frequency varies from weekly to bi-yearly. The owners or managers of the FSEs make the determination for the pumping, cleaning frequency, and cleaning methods, based on type and size of the FSE, as well as the frequency of usage.

As far as the inspections, reporting requirements, and enforcement actions go, they are consistent with the County's current sewer use ordinance and draft FOG POLICY. The County is in communication with the restaurant association to finalize the proposed amendment. Now the ball is in County's court for review.

A12. Pretreatment

The Howard County Pretreatment staff is based at the County's LPWRP and is responsible for the implementation of the County's Pretreatment program, including limiting the discharge of fats, oils, and grease (FOG) into the County's collection system. On January 19th, 2012, the County received an excellent remark on the pretreatment program from MDE for the annual Pretreatment Compliance Inspection (PCI) conducted on July 19th, 2011.

B. The Effectiveness of the Approved CMOM Program

B1. CMOM Programs Recent Performance Summary

The County's CMOM program has been fully implemented starting January 2011. As of today, the County has submitted five (5) semi-annual progress reports, under the requirement of "Paragraph F, Reporting" of the Complaint and Settlement Agreement with MDE.

In 2012, the County purchased a new version of their Asset Management System, and was in the process of upgrading their Asset Management System from Hansen 7.7 to 8. The County has completed the integration by May 2013. From then on, all the progress of CMOM activities shall be tracked in Hansen 8.

Johnson Mirmiran & Thompson Inc. (JMT) continues the on-site engineering support and contractor management to assist the implementation of the CMOM program. This on-site level of effort is in conjunction with JMT Technology Group's efforts in developing a Geographic Information System (GIS) for the County's sanitary collection system and water distribution system.

Starting January 2011, the two County's on-call contractors, Video Pipe Service (VPS) and TRB Specialty (TRB) have been performing collection system repair/restore/replacement activities concurrently with the maintenance crew of Bureau of Utilities to meet the CMOM goals.

The Self-Audit process involves interviewing the various personnel, observance of field activities, field inspection of equipment and resources, and review of pertinent records and management information systems. Specific audit components include audit findings

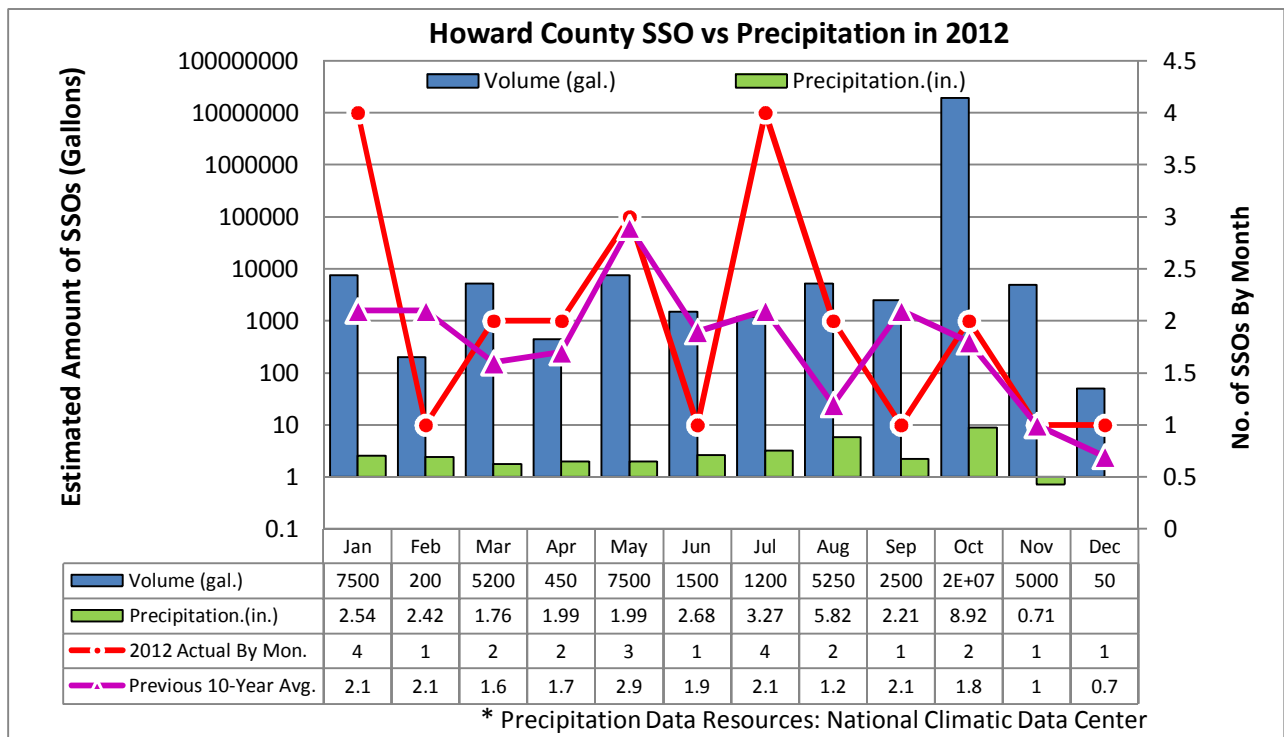
(program deficiencies), audit responses (steps to correct each deficiency), and schedules to implement audit responses. In order to assist the Self-Audit process, the County utilizes a CMOM Self-Audit Checklist as shown in Appendix B-1 to track the audit findings and audit responses.

B2. Sewer System Overflows (SSO’s) in the Previous Year

For the period of January through December 2012, there were twenty-four (24) SSO’s within the Howard County Sanitary Sewer Collection system for a total of 19,536,850 gallons. See Appendix C for a detailed break-down with probable causes in 2012.

There was one SSO occurrence at Little Patuxent Water Reclamation Plant (LPWRP), which is caused by power outage during Hurricane Sandy and account for 99.8% of the total overflow volume. LPWRP lost both feeders around 11 p.m. on October 29th, and the electricity was retrieved around 11:30 a.m. the next morning. Although the plant currently holds a backup generator, it can only power the plant for 15 to 30 minutes at a time. In that case, the County has engaged Hazen & Sawyer on a capital project to design a backup diesel generator system by summer 2014, which could supply the power sufficient for 24 hours.

Same as 2011, Howard County maintains a far below national average for the number of sewer overflow occurrence. The national average for SSO is 4.5 per 100 miles of sewer, based on a 2004 EPA report to Congress. The County's average is 2.4 per 100 miles of sewer.



The County's SSO's have been plotted by month in the above chart. As is shown in the chart, October, when Hurricane Sandy took place, had the greatest amount of precipitation and overflow volume in 2012.

Hurricane Sandy was the deadliest and most destructive hurricane of the 2012 Atlantic hurricane season. Hurricane Sandy affected 24 states, including the entire eastern seaboard from Florida to Maine.

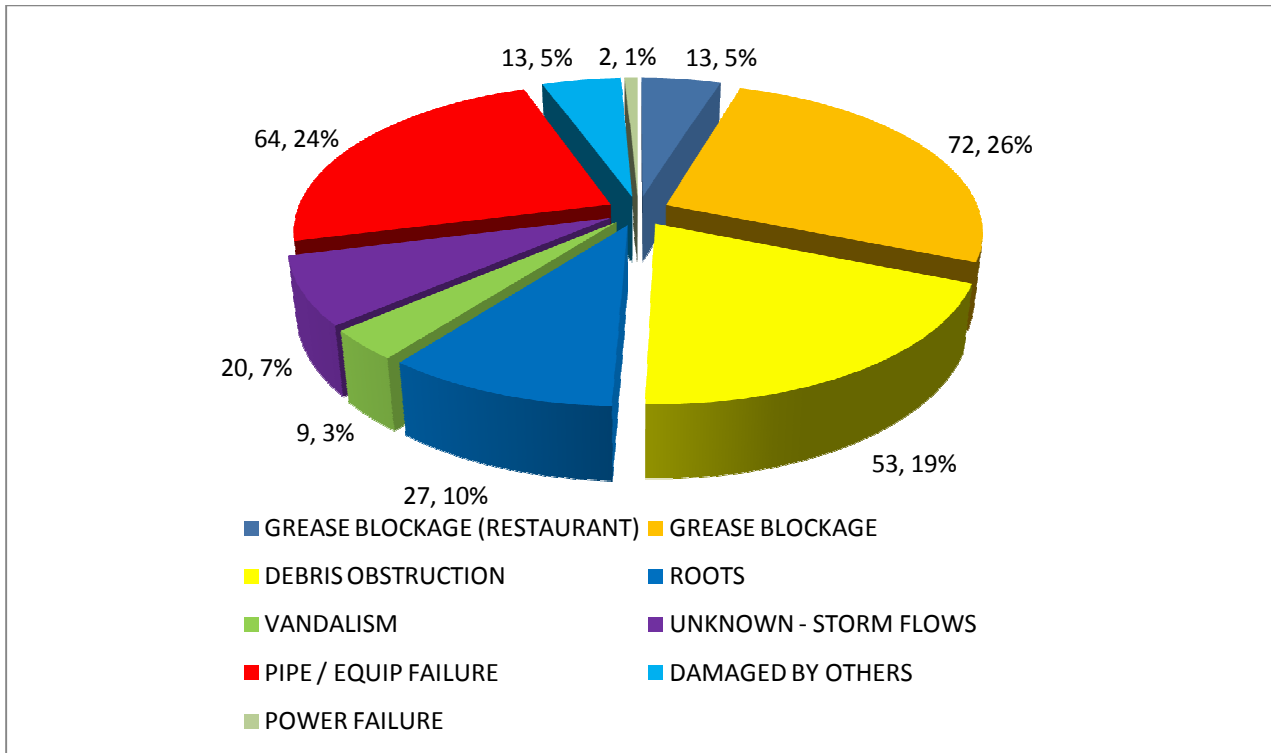
C. The Number and Causes of Overflows and Known Building Backups

As is described in Section B2, 99.8% of the total overflow volume was caused by Hurricane Sandy, an act of god. Except for the incident at the LPWRP, the total overflow quantity was the least of the previous 10 years' record. In the CMOM Self-Audit Checklist, the causes of overflows have been categorized into:

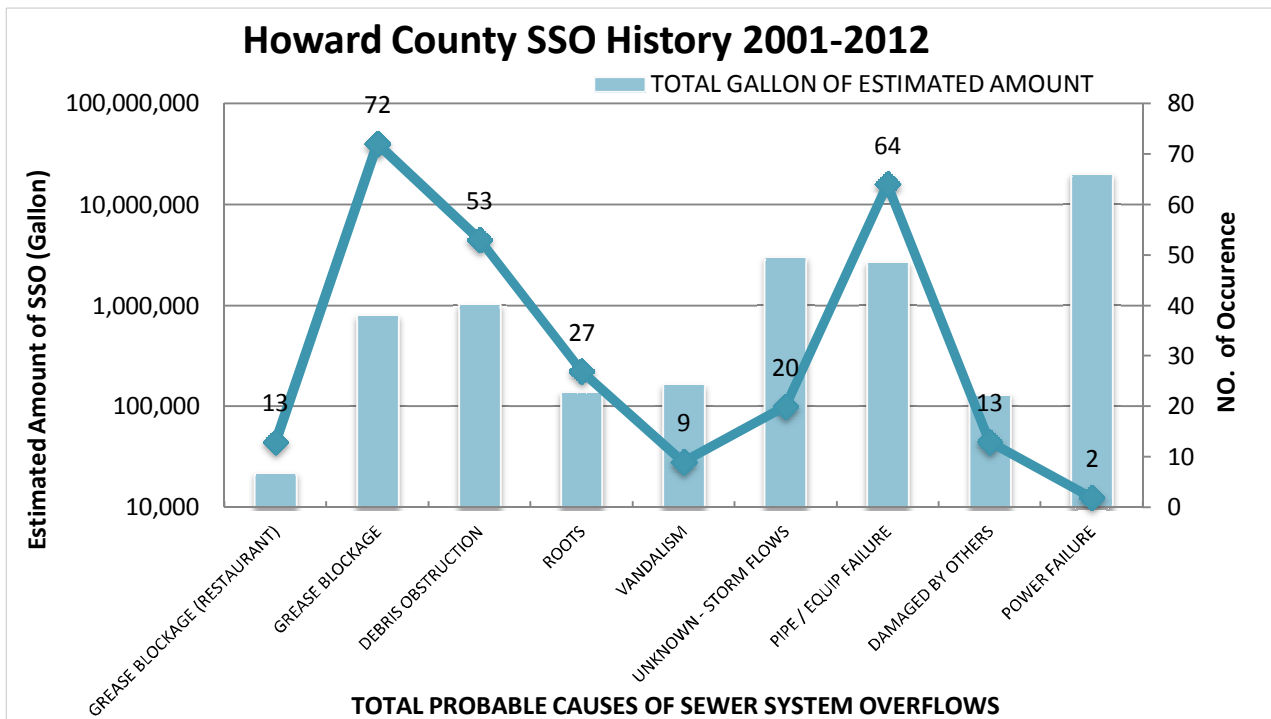
Category	Notes
Capacity Related	SSO's are storm related
Maintenance Related	SSO's due to debris obstruction and roots
Operations Related	SSO's due to power failure
Caused By FOG	SSO's due to restaurant grease blockage
Caused By Sources Other Than FOG	
Caused By Pipe/Equipment Failures	
Caused By Damage	SSO's due to vandalism, contractor misconduct, etc.

The number and probable causes of SSO's and building backups in 2012 have been illustrated in Appendix C.

To take a further step into the long-term investigation, the County researches the causes and numbers of SSO occurrence from 2001 to 2012.



As is shown in the above chart, the top three (3) causes of overflows county-wide are: grease blockage, pipe/equipment failure, and debris obstruction. While taking the estimated overflow amount into consideration, power failure, storms, pipe and equipment failures rank the highest of the total SSO volume contribution.



Location wise, the County's SSO's from 2001 to 2012 are plotted on the GIS map, and SSO's are symbolized by the seven (7) major causes defined in the CMOM Self-Audit Checklist. See Appendix E.

Unlike many municipalities that are struggling to control overflows and maintain an aging infrastructure system, Howard County's collection system is comparatively young and sized to avoid most capacity issues. Howard County has positioned itself with sufficient resources to adequately maintain the existing sanitary sewer collection in the sanitary sewage system and keep pace with current needs.

D. Actions Planned and/or Implemented to Respond to Any Failures

D1. Successes and Failures in Achieving the Goals in 2012

As is shown in the Section A and Appendix B, although most CMOM tasks completed in 2012 didn't achieve the goal, the County has improved in the following aspects comparing to the previous year:

- a. Inspected and repaired more sewer mains
- b. Kicked off the first smoke testing program to target the I&I problem in North Laurel
- c. Less customer complaints; and most importantly,
- d. Less number of SSO occurrences.

D2. Action Planned and/or Implemented in Achieving the Goals for 2013

The collection system repair/replacement will still be conducted on an as-needed basis. The County has planned more CCTV main inspections-A3, and smoke testing-A8 in 2013. The cleaning, CCTV and smoke testing activity progress has been illustrated in Figure A1, A2 and A3 respectively in the Appendix D.

E. Collection System Deficiencies Identified and Actions Planned or Implemented

E1. Collection Systems Deficiencies Identified under CMOM

As we concluded in Section C, the area of greatest need with regard to the collection system is to control the County's SSO's which are caused by blockages (grease, debris, and roots). The County has programmed various CMOM components to be performed in order.

The cleaning team is scheduled to go first. Based on the notes taking by the cleaner, the County is able to identify the problematic area with grease, roots, debris and other obstructions. Then the County engages the CCTV contractor to conduct a NASSCO PACP certified condition assessment. Therefore, the engineers could decide the rehabilitation method according to the defects qualified and quantified during CCTV inspections. The County also schedules the comprehensive smoke testing projects. The contractors are looking for locations such as roof drains or storm drain inlets directly to the sewer collection system, as well as defective mains and cleanouts caps. The final steps will be rehabilitation design and construction.

By the end of 2012, the County has completed the CCTV inspections for the problematic sewers notified by cleaner in the following drainage basins: small pump stations above route 99, Tiber and Sucker Branch, Route 40 pump station, and Plumtree. The drainage basins are illustrated in Appendix D & E.

E2. Collection Systems Deficiencies Identified under SSES

The SSES report for the Little Patuxent was submitted to MDE on May 25th, 2010 in accordance with the Agreement. The contractor completed the necessary improvements by November 2011. Three progress reports have been submitted to MDE to describe the activity/action taken to reduce I&I along the Little Patuxent Interceptor. The first progress report was submitted on March 24th, 2011, the second was submitted on June 2nd, 2011 and the third progress report was submitted to MDE on January 3rd, 2012.

The SSES reports for the Patapsco Basin and Hammond/Guilford Basin were delivered to MDE on December 7th, 2011, followed by the Recommendations and Implementation Schedule sent through email on August 23rd, 2012. MDE approved both SSES reports along with the Recommendations and Implementation Schedule on October 2nd, 2012. Meanwhile, the County had started investigating the rehabilitation activities recommended in the SSES reports, and prioritized the investigation and rehabilitation activities towards the defects based on their I&I contribution. By 2013 July, the County has almost completed all corrective actions which lead to major I&I contribution.

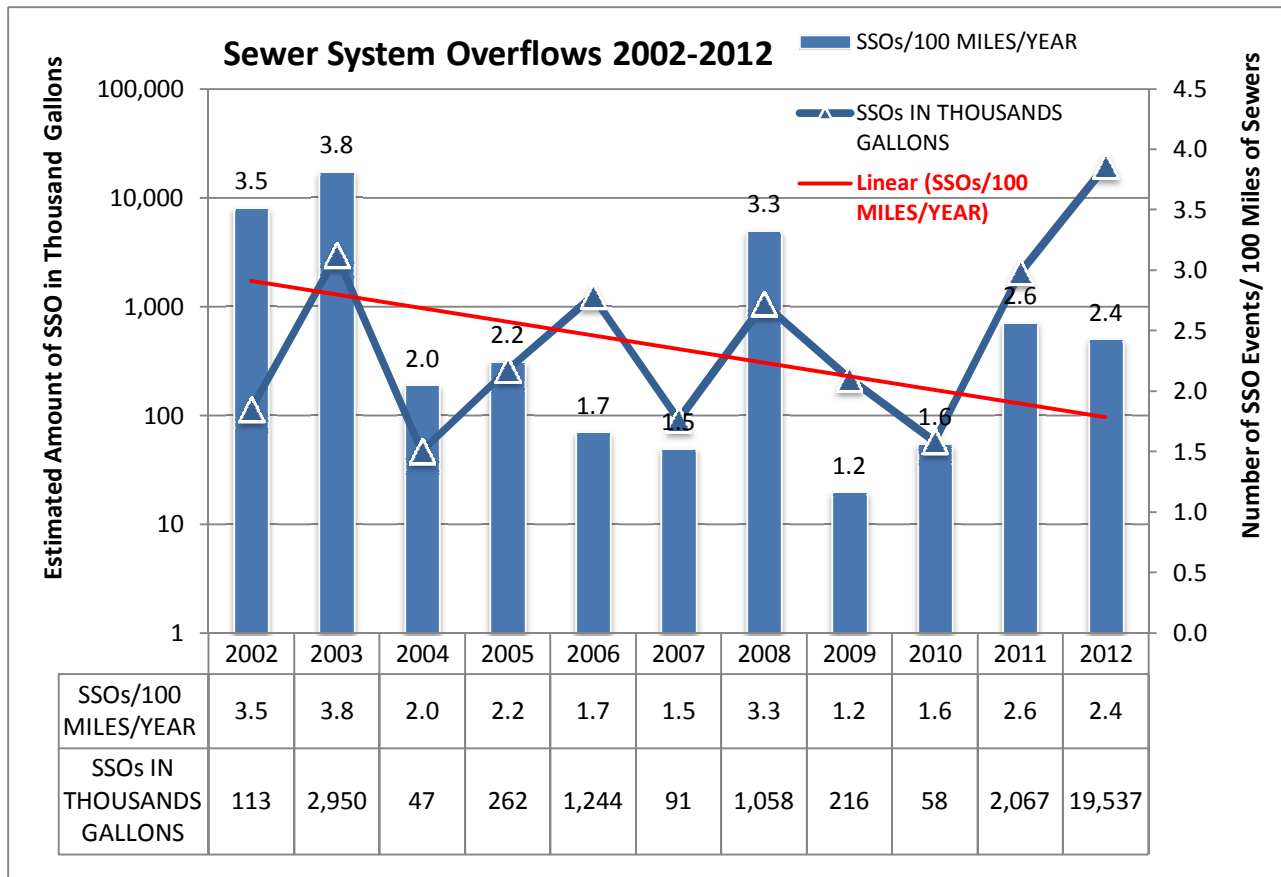
E3. Collection Systems Deficiencies Identified during Routine Preventive O&M

The County's in-house staff implements a preventive O&M program, which is to investigate the collection system on a regular basis and rehabilitate the deficiencies as needed. The County's in-house staff also takes care of the customer complaints and responds to the overflow emergencies.

F. Whether the County has adequately prioritized rehabilitation work to maximize the reduction of Overflows

Since sanitary sewer systems are subject to harsh and corrosive conditions, the CMOM program is required to assess the structural condition of the system through field investigations including CCTV inspections. The results of the assessments lead to identifying and ranking the long-term and short-term rehabilitation actions to correct the problems.

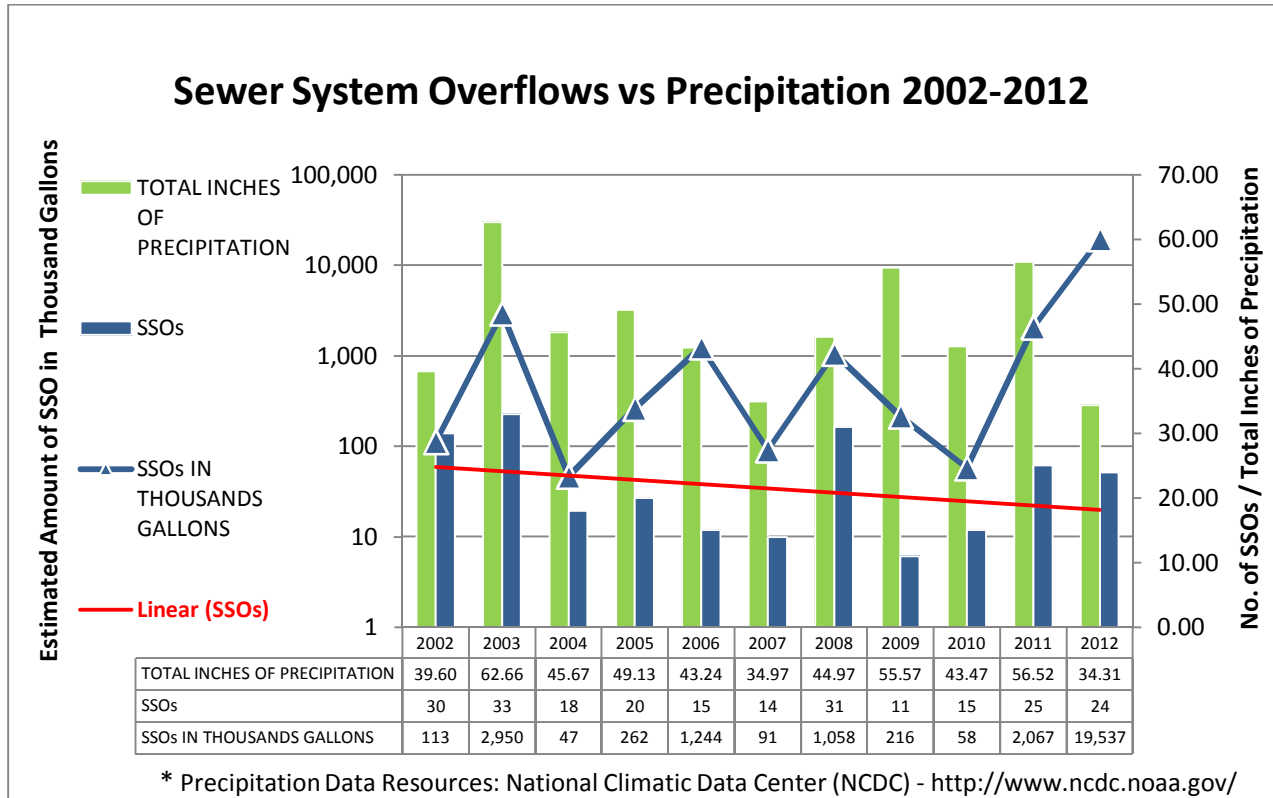
Regarding the rehabilitation actions recommended in the SSES reports of Little Patuxent, Patapsco, Guilford Run/Hammond Branch, the consultants use the combined results not only from the field investigation, including manhole inspections, CCTV sewer main condition assessment, flow monitoring, but also the hydraulic model to prioritize the work to maximize the reduction of overflows.



As is shown in the above chart, over the past 11 years from 2002 to 2012, the County has the SSOs/mile/year ranging from 1.2 to 3.8, while the national average posted by EPA in 2004 is 4.5. What's more, the County's overall trend of SSOs/mile/year is downward.

To further investigate the correlation between numbers of SSO occurrence to the total amount, the 11 years' precipitation data is plotted in the below chart. Although the

numbers of SSO occurrence over the years keep a downward trend, the total overflow amount is severely affected by the by-pass incident that happened during Hurricane Sandy at LPWRP.



This report serves the purpose of the County’s second yearly Self-Audit. The County will continue to monitor the performance of the CMOM program annually to make sure the County

- Properly manage, operate, and maintain, at all times, the parts of collection system that they own or have operational control.
- Provide adequate capacity to convey base flows and peak flows.
- Take all feasible steps to stop and minimize the impact of sanitary sewer overflows.
- Provide notification to parties with a reasonable potential for exposure to pollutants associated with an overflow event.
- Develop a written summary of their CMOM program and make it available to the public upon request including self-audits.

Appendix A-1

Sample FSE Inspection Checklist

Howard County Government Food Service Establishment Checklist

1. Facility Name: Domino's Pizza Inspection Date: 05/21/2012
2. Facility Address: 6010 Meadowridge Center Drive, Elkridge, Maryland, 21075
3. Facility Manger: Manuel Sanchez
4. Type of food service operation (café, cafeteria): Pizza Restaurant

I Grease Trap/ Interceptor Size: 1000 Gallons

1. Type (under the sink, in-ground, automatic): Outside
2. Location: In the front of Kupcake & Company/ which is located in the rear of the Building
3. Pump out schedule (monthly, weekly, etc.): Quarterly
4. Pumper/ service provider: Hatfield's Septic Service
5. Yes No Maintenance log available on-site
Note: Management must observe pumping to ensure it is done properly.

II Kitchen Equipment/ Devices

1. Yes No Fine mesh strainers are in place in all floor drains and sinks.

Dry Cleanup

1. Yes No Are serving wares, utensils or food preparation surfaces wiped clean before washing?
2. Yes No Are employees provided the necessary training and tools (rubber scrapers, brooms, absorbent materials for spills) for dry cleanup?
3. Yes No Are garbage cans present in pre-wash area?
4. Yes No Are floors swept before moped or hosed down?

Employee Awareness Training

1. Yes No Is BMP poster on display at the 3 compartment sink? Are employees trained on FOG BMPs and are employees trained on these follow these procedures? *1 given*

Grease Disposal

1. Yes No Are outside oil and grease storage bins kept covered?
2. Yes No Is there a cooking oil caddy to prevent oil and grease spills while transferring from inside the restaurant to the outside storage bin?
3. Yes No Are the outside storage bins located away from storm drains and catch basins?
4. Name of Hauler: N/A Tele No: N/A

Customer Signature: _____

Howard County Government

Food Service Establishment Checklist

1. Facility Name: Cafe' Bagel Inspection Date: 05/23/2012
2. Facility Address: 6010 Marshalee Drive, Elkridge, Maryland, 21075
3. Facility Manger: Andy Lee
4. Type of food service operation (café, cafeteria): Bagel Shop

I Grease Trap/ Interceptor Size: N/A Gallons

1. Type (under the sink, in-ground, automatic): N/A
2. Location: SOLID WASTE PERMIT/ Not required to have trap/interceptor
3. Pump out schedule (monthly, weekly, etc.): N/A
4. Pumper/ service provider: N/A
5. Yes No Maintenance log available on-site
Note: Management must observe pumping to ensure it is done properly.

II Kitchen Equipment/ Devices

1. Yes No Fine mesh strainers are in place in all floor drains and sinks.

Dry Cleanup

1. Yes No Are serving wares, utensils or food preparation surfaces wiped clean before washing?
2. Yes No Are employees provided the necessary training and tools (rubber scrapers, brooms, absorbent materials for spills) for dry cleanup?
3. Yes No Are garbage cans present in pre-wash area?
4. Yes No Are floors swept before moped or hosed down?

Employee Awareness Training

1. Yes No Is BMP poster on display at the 3 compartment sink? Are employees trained on FOG BMPs and are employees trained on these follow these procedures?

Grease Disposal

1. Yes No Are outside oil and grease storage bins kept covered?
2. Yes No Is there a cooking oil caddy to prevent oil and grease spills while transferring from inside the restaurant to the outside storage bin?
3. Yes No Are the outside storage bins located away from storm drains and catch basins?
4. Name of Hauler: N/A Tele No: N/A

Customer Signature: _____

Appendix A-2

Sample Semi-annual Operation and Maintenance Report

Report Must Be Posted Near Grease Trap
SEMI-ANNUAL OPERATIONS AND MAINTENANCE REPORT

Name of Establishment: Royal Farms #54

Facility Address: 8268 Lark Brown Road, Elkridge, Maryland, 21075

Contact Person: Series Peeyush Title: Manager

Tel. No.: 410-371-9580 Fax No: 410-889-8347

Report Period (please circle one) from: 8/1 to: 1/31 or from: 2/1 to: 7/31

GREASE TRAP MAINTENANCE LOG			
When was it last cleaned	When was it last cleaned	When was it last cleaned	When was it last cleaned

When Was the Barrels Picked Up			
When Was the Barrels Picked Up	When Was the Barrels Picked Up	When Was the Barrels Picked Up	When Was the Barrels Picked Up

Name of Rendering Company: _____

Telephone Number of Rendering Company: _____

DO ALL SINKS AND FLOOR DRAINS HAVE SCREENS (STRAINERS) IN PLACE? **YES** **NO**

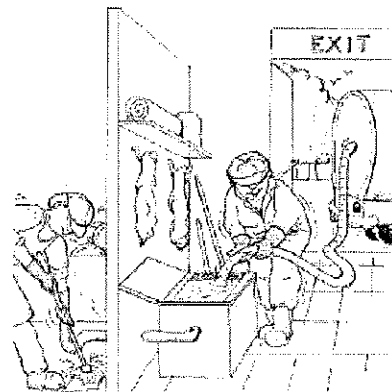
CERTIFICATION: To the best of my knowledge, I certify that the above information is true, complete and correct.

PRINT NAME: _____

SIGNATURE: _____

TITLE: _____ DATE: _____

REPORTS ARE DUE BY: FEBRUARY 1ST AND AUGUST 1ST OF EACH YEAR. REMEMBER: WE START ACCEPTING FORMS BEGINNING JANUARY AND JULY FOR THE CORRESPONDING CYCLE



FAX TO: 410-880-5812

Appendix A-3

Sample Waste Hauler Report

Howard County

Department of Public Works
BUREAU OF UTILITIES

Little Patuxent Water Reclamation Plant
8900 Greenwood Place, Savage, Maryland 20763
Tel.: 410-880-5810 Fax: 410-880-5812

Date: 5-4-12
Time: 1:15

Hauler Inspection Report Facility Information

Name: Copeland's
Address: 10200 Windcopin Circle
Hauler Company: VP

Frequency: 4 wks X Per Month 1 or Per Year 1

Interceptor

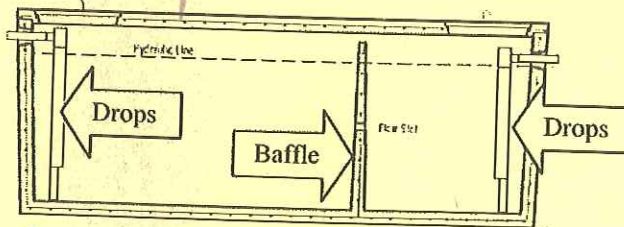
Grease / Used Oil Layer	<u>14</u> Inches	➔ Total	<u>27</u>
Solids / Sludge Accumulation:	<u>13</u> Inches		
Influent / Effluent Drops Intact	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Baffles / Interceptor Intact	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Manholes Accessible	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Cleanouts	Missing Caps <input type="checkbox"/>	Full of Debris <input type="checkbox"/>	

Hauler Driver Initials: VP

Requires Immediate Inspection of County Official Yes No

Facility Employee Signature: [Signature]

Disposal Location: VP



You May leave yellow copy at Weigh Station

White - Business Yellow - Agency Pink - Hauler

Appendix B

CMOM Self-Audit Checklist

Appendix B-1 - CMOM Self Audit Checklist

I. CMOM Programs Recent Performance Summary			
Performance Measures for Year 2012	Year 2013		Month June
	Goal	Actual	Comment
A. Number of Customer Complaints	0	687	Plugged sewer service line: 512 Plugged sewer main: 17 Clean out cap and/or panella issue: 100 Shared Septic Sewer Overflow: 1 Sewer gas odor: 18 Sewer manhole insert repair/replacement: 2 Sanitary sewer overflow: 8 Struck sewer service, main or asset: 6 Sewer Inquiry: 23
B. Number of NPDES Permit Violations	0	0	
C. Number of Capacity Related Overflows	0	0	SSOs storm related
D. Number of Maintenance Related Overflows	0	7	SSOs due to debris obstruction and roots
E. Number of Operations Related Overflows	0	1	SSOs due to power failure
F. Number of Overflows Caused By FOG	0	0	SSOs due to restaurant grease blockage
G. Number of Overflows Caused By Sources Other Than FOG	0	11	SSOs due to grease blockage
H. Number of Overflows Caused By Pipe/Equipment Failures	0	3	
I. Number of Overflows Caused By Damage	0	2	SSOs due to vandalism, contractor misconduct, etc.
J. Monthly Average Treatment Plant Flow Rate (gallon per capital-day [gpcd])	179	138	Goal is defined in the 2013 water and sewer allocation report

Appendix B-1 - CMOM Self Audit Checklist

I. CMOM Programs Recent Performance Summary			
Performance Measures for Year 2012	Year 2013		Month June
	Goal	Actual	Comment
K. Number of By-Passes at Treatment Plant	0	1	The one by-pass occurred during Hurricane Sandy on Oct. 29th, 2012, caused by power outage.
L. Volume of Treatment Plant By-Pass	0	19.5 MG	MG = million gallons
M. Miles of Sewer Line CCTV'd	49	8	CCTV service contracts expanding expected in 2013
N. Miles of Sewer Line Cleaned	195	161	
O. Linear Feet of Sewer Line Repaired	51480	4888	Repair as needed
P. Number of Manholes Inspected	6000	2869	
Q. Number of Manholes Repaired	300	25	Repair as needed
R. Number of Grease Interceptors Inspected	768	559	768 = (498 Outside Interceptors + 2 * 135 Inside Interceptors) 559 = (319 Outside Interceptors + 240 Inside Interceptors)
S. Miles of Sewer Line Smoke Tested	N/A	27	
T. Number of Pumps Stations Repaired	N/A	1	Allenford P.S. had a force main repair in 2012

Appendix C

2012 Sewer System Overflows (SSO's) Report

PROBABLE CAUSES OF SEWER SYSTEM OVERFLOWS – 2012

LOCATION	DATE	CAUSE:	GREASE BLOCKAGE (RESTAURANT)	GREASE BLOCKAGE	DEBRIS OBSTRUCTION	ROOTS	VANDALISM	UNKNOWN STORM FLOWS	PIPE / EQUIP FAILURE	DAMAGED BY OTHERS	POWER FAILURE	DURATION in hours	ESTIMATED AMOUNT - GALLONS
7980 Tar Bay Drive	01/05/12					X						2.00	2,500
6116 Normandy Woods	01/09/12			X								1.50	1,500
5929 Setter Dr	01/12/12					X						2.00	2,500
9438 Fairview Ave	01/29/12			X		X						2.50	1,000
5473 Ring Dove Ln	02/21/12			X								1.00	200
7741 Washinton Blvd	03/20/12									X		1.00	200
5016 Pasture Ct	03/29/12					X						1.50	5,000
9055 Junction Dr	04/17/12				X							1.00	250
8990 Route 108	04/19/12					X			X			2.00	200
11612 Wave Lap Way	05/03/12			X								2.00	1,000
10131 Washington Blvd	05/07/12			X								2.25	1,500
6636 Washinton Blvd	05/27/12						X					2.00	5,000
9840 Owen Brown Rd	06/19/12			X								2.00	1,500
5480 Glovcester Rd	07/14/12			X								1.50	800
6908 Rawhide Ridge	07/26/12					X						2.00	200
9161 Commerce Center Dr	07/28/12			X								2.15	150
7108 Crabbury Court	07/30/12								X			0.50	50
6541 Smith Ave	08/04/12			X		X						2.00	5,000
7204 Downing Ct	08/07/12								X			11.00	250
3691 Rogers Ave	09/26/12			X								1.50	2,500
Little Patuxent Pkwy @ Powder Run	10/28/12			X								1.50	500
Little Patuxent Water Reclamation Plant	10/29/12										X	12.00	19,500,000

PROBABLE CAUSES OF SEWER SYSTEM OVERFLOWS – 2012

LOCATION	DATE	CAUSE:	GREASE BLOCKAGE (RESTAURANT)	GREASE BLOCKAGE	DEBRIS OBSTRUCTION	ROOTS	VANDALISM	UNKNOWN STORM FLOWS	PIPE / EQUIP FAILURE	DAMAGED BY OTHERS	POWER FAILURE	DURATION in hours	ESTIMATED AMOUNT - GALLONS
9170 Hitching Post Ln	11/09/12			X								3.00	5,000
9770 Patuxent Woods Dr	12/14/12			X								1.00	50
		Totals:	0	13	1	7	1	0	3	1	1	60.90	19,536,850

Blockage FOG

Blockage Other

Maintenance

Maintenance

Other

Capacity

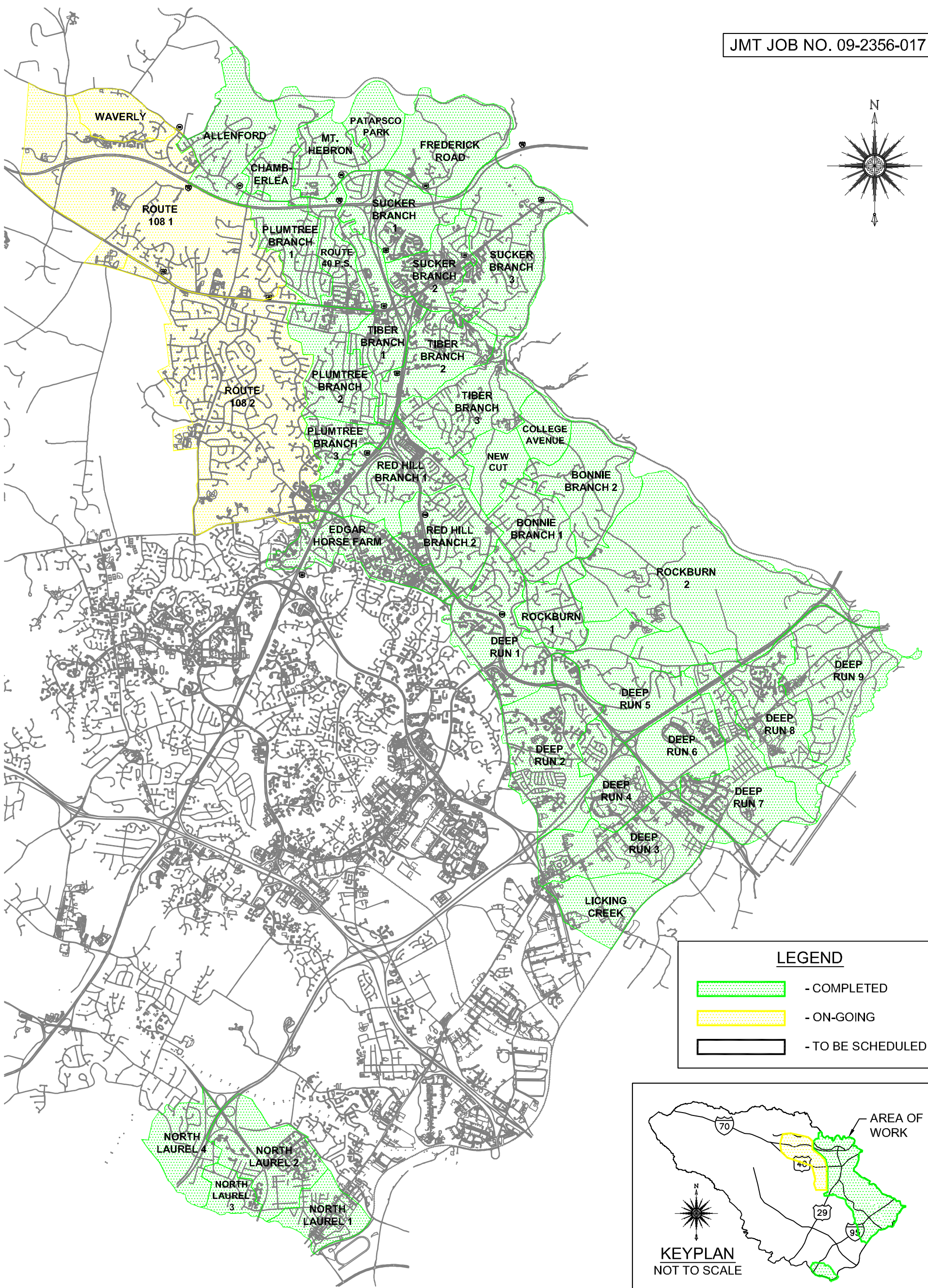
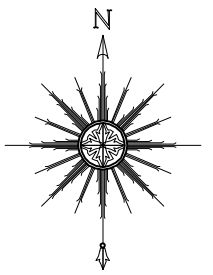
Pipe/Equipment Failures

Other

Operation

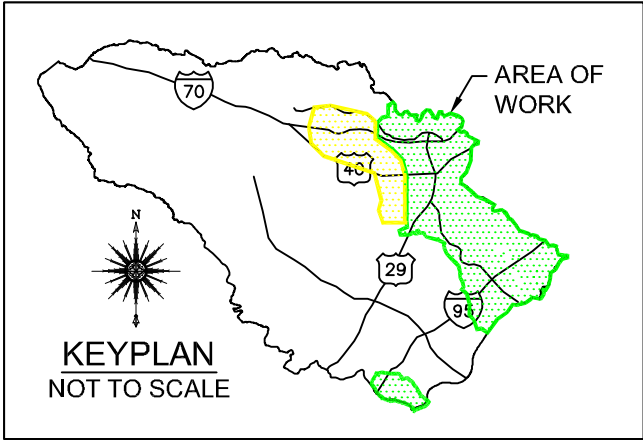
Appendix D

Action Planned and/or Implemented in 2013



LEGEND

- COMPLETED
- ON-GOING
- TO BE SCHEDULED

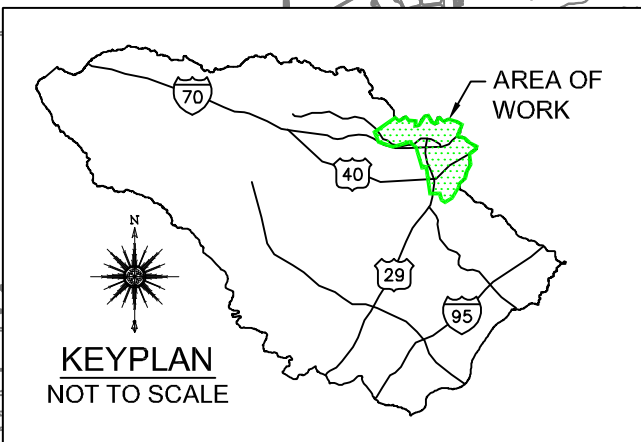
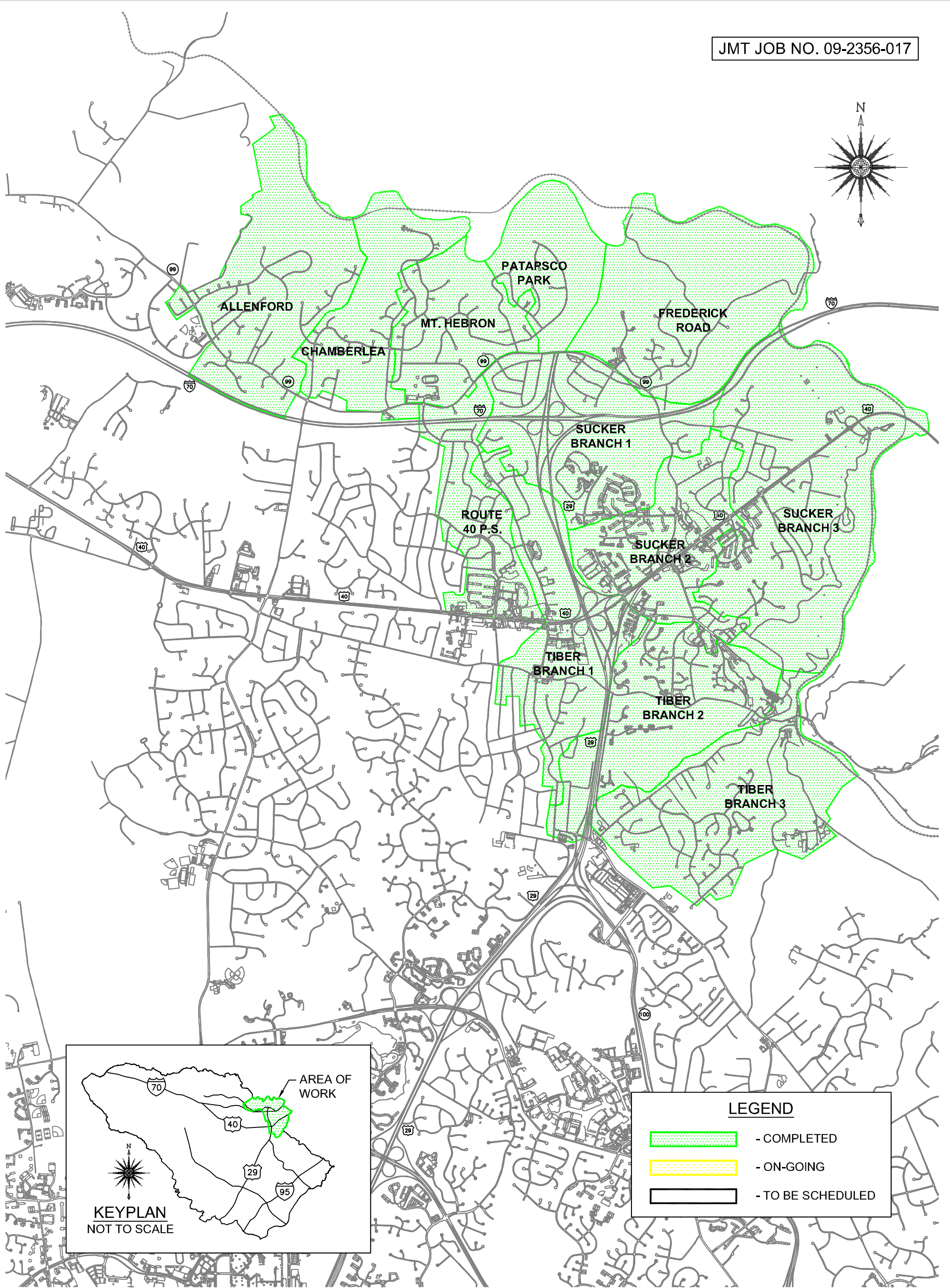
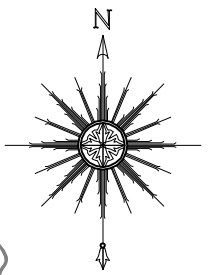


HOWARD COUNTY CMOM PROGRAM

CLEANING SCHEDULE

5/21/2013

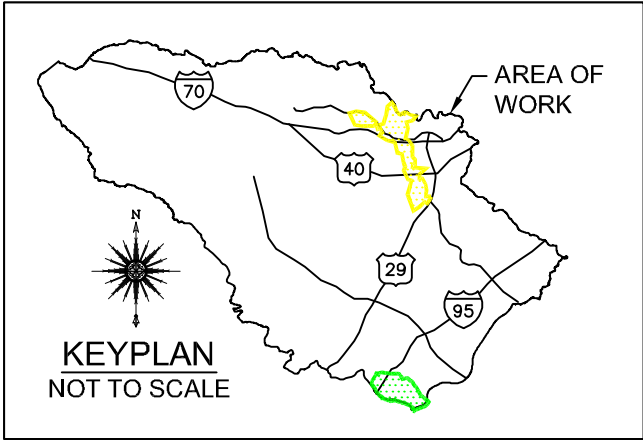
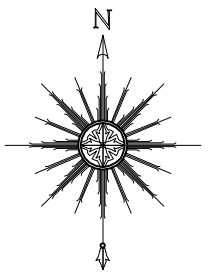
FIGURE D1



LEGEND	
	- COMPLETED
	- ON-GOING
	- TO BE SCHEDULED

HOWARD COUNTY CMOM PROGRAM

CCTV SCHEDULE



HOWARD COUNTY CMOM PROGRAM

SMOKE TESTING SCHEDULE

Appendix E

2001-2012 Sewer System Overflows (SSO's) Map

Sanitary Sewer Overflow 2001-2012

Sanitary Sewer Overflows (SSO's) Categorized By Cause

- SSO_FAIL
- SSO_MAINT
- SSO_BLOC
- SSO_OPERATION
- SSO_DAMAGED
- SSO_CAPACITY
- SSO_FOG

CMOM Drainage Basin

- CMOM_DrainageBasin

SewerShedName

- Annapolis Junction
- Anne Arundel County
- Baltimore County
- Deep Run
- Dorsey Run
- Guilford Run
- Hammonds Branch
- Little Patuxent
- Middle Patuxent
- North Laurel
- Other
- Patapsco
- Rt 108 Pump Station
- Unknown
- Water Only

